exists in terms of laboratory monitoring protocols and perceived barriers regarding the use of these drugs.

PAR8

ALTERNATIVE DECISION ANALYSIS MODELING IN THE ECONOMIC EVALUATION OF TUMOR NECROSIS FACTOR INHIBITORS IN PATIENTS WITH RHEUMATOID ARTHRITIS

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OBJECTIVES: To provide a review of the decision analytic models used in the economic evaluations of Tumor Necrosis Factor (TNF) inhibitors (adalimumab, etanercept, and infliximab) in Rheumatoid Arthritis (RA) and to address some important issues surrounding the choice of such analytic modeling techniques in these economic analyses. **METHODS:** A systematic literature search was conducted by one researcher among publications in peer-reviewed journals from January, 1996 to October, 2004 through MEDLINE and EMBASE databases to identify studies that used decision analysis models to evaluate cost-effectiveness of TNF inhibitors in patients with RA. All the studies of TNF inhibitors in patients other than RA, and those conducted in children were excluded from the review. **RESULTS:** The systematic literature search identified 28 articles. Of these only ten studies fulfilled the inclusion criteria and were included in the review process. These ten studies used different decision analysis models, which are listed as follows: decision trees (two studies), Markov model (four studies), Monte Carlo Simulation (two studies), and Discrete Event Simulation (two studies). Since the models vary in complexity, the choice of these modeling techniques depends on the course of the disease, impact of the drugs, and the availability of data. The results of most of the studies indicate that all three TNF inhibitors are cost-effective compared with traditional agents and have cost-effectiveness ratios of less than $50,000/QALY gained. However, one study reports the cost-effectiveness ratio of more than $100,000/QALY for etanercept and infliximab. **CONCLUSION:** Based on the results derived from different modeling techniques, it would seem that all methods provide useful techniques for economic evaluations of TNF inhibitors. However, to increase the confidence of the physicians and payers, key issues such as validity of the models, transparency during construction of the models, quality of data sources, and handling of uncertainty need to be resolved.

PAR9

EFFECTS OF ADALIMUMAB MONOTHERAPY ON HEALTH UTILITY AND FATIGUE IN PATIENTS WITH LONG-STANDING, SEVERE RHEUMATOID ARTHRITIS (RA)

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OBJECTIVES: In patients with long-standing, severe RA who failed methotrexate (MTX), we sought to determine whether monotherapy with the fully human, anti-TNF monoclonal antibody, adalimumab, improved two important patient-reported outcomes (health utility and fatigue) vs. placebo. **METHODS:** The Health Utilities Index Mark 3 (HUI3) and the Functional Assessment of Chronic Illness Therapy-Fatigue (FACIT-F) questionnaire were administered in a health economics companion study to a placebo-controlled, pivotal trial (DE011) of adalimumab monotherapy. HUI3 and FACIT-F were administered at baseline, three-months, and end of study. The HUI3 scale is 0–1, with "1" denoting perfect health and "0" denoting death. FACIT-F scores range from 0–52, with higher scores representing less fatigue. Changes in HUI3 of >=0.03 and FACIT-F of >=4 are considered clinically meaningful. **RESULTS:** Patients received either adalimumab 40 mg every other week without concomitant disease-modifying antirheumatic (DMARD) therapies (n = 99) or placebo (n = 96) over 26-weeks. Baseline characteristics were indicative of long-standing, severe RA: age: 53 yrs; disease duration: 11 yrs; TJC (0–68): 34; HAQ: 1.9, CRP (mg/L): 56.6; previous DMARDs: four (mean values). Baseline utility scores were comparable for adalimumab and placebo (0.27 vs. 0.28), and much worse than that of the age- and sex-adjusted population norm (0.88). Similarly, baseline FACIT-F scores were also comparable (26.1 for adalimumab and 26.3 for placebo) and, again, considerably worse than that of the general population (43.6). After 26-weeks, mean HUI3 scores increased 0.18 from baseline for adalimumab vs. 0.08 for placebo ($p < 0.05$). Mean FACIT-F scores increased 8.7 for adalimumab vs. 3.3 for placebo ($p < 0.01$). **CONCLUSION:** Although optimal use of tumor necrosis factor antagonists is with MTX, some patients do not tolerate or benefit from MTX. Adalimumab monotherapy provided statistically significant, clinically meaningful improvements in health utility and fatigue for patients with severe, long-standing RA who had failed MTX therapy.

PAR10

SATISFACTION WITH PAIN MEDICATION AND INTENTION TO COMPLY WITH TREATMENT: A STRUCTURAL EQUATION MODEL IN RHEUMATOID ARTHRITIS PATIENTS

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OBJECTIVES: Patient satisfaction with medication is increasingly set as treatment goal because it is hypothesized to increase compliance. This study investigates plausible associations between levels of satisfaction with pain medication and external variables (e.g., satisfaction with medication information, medication characteristics, treatment efficacy as perceived by the patient) as established in the literature; to explore the effect of satisfaction with pain medication on intention to comply with current medication. **METHODS:** Rheumatoid arthritis (RA) patients undergoing treatment were mailed two sets of questionnaires two-weeks apart: The Pain Treatment Satisfaction Scale, the SF-36, a pain visual analogue scale, and the Brief Pain Inventory. The influence of these variables on satisfaction with pain medication was estimated using structural equation modeling. **RESULTS:** The population consisted of 68 RA patients with a mean baseline pain score on a one to ten scale of 4.73 ± 2.72. The overall model was significant (chi-square p-value <0.001) with an excellent fit (normed fit index = 0.97). The strongest observed relationship was a positive association between satisfaction with pain medication and intention to take pain medication (unstandardized path coefficient Beta = 0.54, $p < 0.001$). Predictors of satisfaction with pain medication included duration of pain relief (Beta = 0.45, $p < 0.001$), satisfaction with the information provided by health care professionals (Beta = 0.21, $p < 0.01$) and expectations of pain relief (Beta = 0.20, $p < 0.01$). **CONCLUSION:** RA patients' intention to comply with pain medication is influenced to a large extent by the level of satisfaction with their pain medication. Duration of pain relief positively influences satisfaction with pain medication, as do (to a lesser degree) satisfaction with information about treatment and medication expectations. Improving compliance with care not

only depends on the clinical effectiveness of medications, but also on how satisfied patients are with treatment information and how well their treatment expectations are managed.

PAR11

THE IMPACT OF DEPRESSION ON RHEUMATOID ARTHRITIS PATIENT QUALITY OF LIFE

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OBJECTIVES: The presence of psychological distress, such as depression and negative mood is very common in patients with rheumatoid arthritis (RA). The purpose of this study was to examine the impact of depression on RA patients' quality of life. **METHODS:** The study consisted of 1130 rheumatoid arthritic patients from a Western US managed care organization. Longitudinal data on diagnosis and quality of life was collected at three annual periods. Patients' health related quality of life was measured by the Physical Component Summary (PCS) score from the SF-36 as rheumatoid arthritis is generally considered a disease with physical impairment. We derived the effect size in order to compare the quality of life between the depressed and the non-depressed RA patients. A dynamic panel data model was further developed to examine the impact of depression on patients' quality of life. The model contained the lagged dependent variable (quality of life of the previous year). Other covariates included in the model were demographic variables and disease severity, as measured by Chronic Disease Score (CDS). **RESULTS:** The incidence of depression in RA patients increased from 10.18% to 14.42% over the study period. The effect size of PCS fell into the medium category (0.5–0.8). The effect size increased with time, indicating that the difference of quality of life between the depressed and non-depressed RA patients increases with the disease duration. Regression analysis from the Panel data model revealed that depression had significant effect on RA patients' quality of life after controlling for demographic variables and disease severity ($P < 0.01$). **CONCLUSIONS:** Depression in patients with rheumatoid arthritis can significantly affect their perceived quality of life. This result suggested that patient intervention related to change patients' coping style, or illness conceptions should be encouraged.

PAR12

ABATACEPT (CTLA4IG) IN COMBINATION WITH METHOTREXATE DEMONSTRATES SUSTAINED IMPROVEMENTS IN PATIENT-REPORTED OUTCOMES OVER TWO YEARS IN RHEUMATOID ARTHRITIS PATIENTS WITH INADEQUATE RESPONSE TO METHOTREXATE

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OBJECTIVES: Abatacept (CTLA4Ig) is the first in a new class of agents for the treatment of RA that selectively modulates the co-stimulatory signal required for full T-cell activation, has shown good and efficacy and tolerability during in a one-year, double-blind, placebo-controlled trial of Abatacept in methotrexate (MTX) inadequate responders. This analysis examined the long-term effect of Abatacept on patient-reported outcomes (PRO) in an open-label extension of this study at two-years. **METHODS:** In the blinded phase of the study, patients with active RA despite MTX treatment were randomized to receive Abatacept 10mg/kg IV monthly + MTX or placebo + MTX for one-year. Patients who completed the blinded phase were eligible to enroll in the long-term extension during which patients were treated with a fixed dose of Abatacept 10mg/kg. Patients evaluated pain and disease activity using the Visual Analog Scale (VAS), physical function using the modified Health Assessment Questionnaire (mHAQ), and QOL using the SF-36. **RESULTS:** In total, 115 patients were randomized to the Abatacept + MTX group; 84 patients (73%) entered the LTE and 75 (89%) of these patients completed two-years of treatment. Statistically significant improvements from baseline in pain, disease activity, and physical function were reported by Abatacept-treated patients as early as day 15, and were further improved and maintained during two-years of treatment. The improvements in patient reported outcomes preceded the improvement seen in the overall clinical response measured by the American College of Rheumatology criterion for a 50% improvement. Abatacept also sustained significant improvements in all eight domains of the SF-36, with the greatest improvements seen in physical function, role-physical, bodily pain, vitality and social function domains. **CONCLUSIONS:** Abatacept rapidly and significantly improves patient-reported outcomes and these improvements are sustained during two-years of treatment.

CANCER

PCN1

META-ANALYSIS OF THE DIAGNOSTIC ACCURACY OF SCREENING TESTS FOR COLORECTAL CANCER

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OBJECTIVES: To conduct a meta-analysis on the diagnostic accuracy of five screening tests for colorectal cancer (CRC): faecal occult blood test (FOBT), double-contrast barium enema (DCBE), flexible sigmoidoscopy (FSIG), conventional colonoscopy (COL) and computed tomography colonoscopy (CTCOL). **METHODS:** A literature search was carried out in MEDLINE (1966–2004) for each of the five tests. Articles were reviewed by two independent reviewers according to the Berkeley Systematic Reviews guidelines. Inclusion criteria were: 1) RCTs or observational studies of screening methods for CRC; 2) subjects patients with low to average risk of colorectal cancer; and 3) complete data to calculate sensitivity and specificity. Exclusion criteria were: 1) non-peer reviewed articles; 2) any articles whose primary aim was not to assess colorectal cancer screening; 3) articles not in English or French; 4) articles published prior to 1975; and 5) high risk screening populations. Heterogeneity within screening test groups was evaluated using X2 test. Combining diagnostic accuracy measures, a summary operator-receiver curve (SROC) was constructed with sensitivity (from pooled data) and specificity (from SROC) for each CRC screening test. **RESULTS:** Initial literature search found 399 for FOBT, 253 for DCBE, 394 for FSIG, 434 for COL, and 345 for CTCOL. Of these, 12, 8, 10, 8, and 13 articles respectively, were selected for inclusion in the final analysis. COL is the only screening strategy without significant heterogeneity among studies ($p = 0.078$). Sensitivity and specificity for FOBT, DCBE, FSIG, COL and CTCOL was 0.543 and 0.976, 0.760 and 0.990, 0.749 and 0.9998, 0.866 and 0.999, 0.867 and 0.972, respectively. **CONCLUSIONS:** Specificity of all screening tests is high with greater variation evident in the sensitivity (0.54–0.87) estimates. COL results are considered most reliable. Additional studies are required to validate CTCOL results due to significant heterogeneity. Positive FOBT, DCBE, FSIG and CTCOL results must be further investigated with COL.